



University of Idaho Biotechnology & Biomedical Research

Presentation to
Legislative Biotechnology Task Force
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University of Idaho Idaho's Land Grant Institution



Professional Programs Historically Focused on:

- Life Sciences in Agriculture and Natural Resources
 - Molecular Biology and Genetics
 - Plant Sciences (crops and forests)
 - Animal Sciences (livestock and wildlife/fish)



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UI's 21st Century Science

- ◆ Focus on Multidisciplinary Teams
 - Professional Programs in Agriculture & Natural Resources
 - Biological Science and Molecular Biology
 - Chemistry, Mathematics and Physics
 - Engineering
- ◆ Critical Success Factors
 - Critical mass of scientists
 - Modern, well-equipped laboratories



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UI's Strategic Themes

- ◆ Promote Science and Technology
 - Biosciences – research, development and management of biologically based organisms and their ecosystems
- ◆ Catalyze Entrepreneurial Innovation
 - Bioindustries – develop high-tech innovations and move innovations to market
- ◆ Steward the Environment
 - Biotechnology - develop technologies that attract and retain natural resource-based industries to Idaho



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UI's Biotechnology and Biomedical Focus



- ◆ Infectious Diseases (NIH COBR)
- ◆ Microbial Ecology (NIH COBR)
- ◆ Reproductive Biology (NSF & USDA)
- ◆ Developmental Biology (NSF & USDA)
- ◆ Neuroscience (NIH and NSF)
- ◆ Bioinformatics (NSF and NIH)



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UI's Science and Technology
Faculty

	Total S&T Faculty	Full-time Research Equivalents	Full-time Biotech/Biomed Equivalents
College			
CALS	221	60	24
CEngr	74	22	9
CNR	45	17	7
CSci	<u>79</u>	<u>31</u>	<u>12</u>
Total	419	130	52

UI's External Grant and Contract Expenditures



The University of Idaho Research Enterprise:

- ◆ Had nearly \$75 million of G&C expenditures in 2005
 - 40% or about \$30 million of the expenditures supported life sciences research
 - 36% or about \$27 million of the expenditures supported other science and technology research areas
 - 24% or about \$18 million of the expenditures supported other creativity activities




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UI's Innovations and Technology Transfer Accomplishments





The University of Idaho has:

- Disclosed 108 new technologies during the past 3-years
- Awarded 11 new patents during the past 3-years
 - 44 active patent applications under consideration
- 47 active technology licenses in 2005
- Helped create 2 new start-up companies during the past 3-years




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Challenges Facing a Competitive Research Program



- ◆ Faculty Recruitment and Retention
 - Competitive salaries
 - Equipped, modern laboratories
- ◆ Graduate Student Recruitment
 - Competitive salaries
- ◆ Maintenance, Renovation and Development of Laboratories
- ◆ Maintenance and Acquisition of Equipment



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Research Facilities and Equipment

♦ Science Laboratories

- New laboratory construction @ \$300/sq. ft. or greater
 - Office/Classroom construction @ < \$200/sq. ft.
- Hoods, benches, conditioned water, gas, air, IT network
- No equipment

♦ Scientific Equipment

- Genetic Sequencers @ \$100K to \$250K many
- Mass Spectrometers @ \$200K to \$500K many
- NMR Spectroscopes @ \$200K to 900K several
- Electron Microscopes @ \$300 to \$900K 1 to 3



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Faculty Recruitment and Retention

- ◆ New Assistant Professor
 - National market – competitive salary
 - 80% of an existing Full Prof salary
 - Competitive Start-up
 - Provide equipment and graduate student stipends
- ◆ New Full Professor
 - International market - very competitive salary
 - 140% of an existing Full Prof salary
 - Competitive Start-up
 - Duplicate or enhance the professors existing laboratory facilities



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Why Recruit and Retain Faculty?

Each Full-time Research Faculty Member should:

- Support 3-5 graduate students
 - Support 1 research technician
 - Support 1-2 post-docs
-
- ◆ This is 5-8 additional employees/major researcher
 - ◆ This is 1-3 additions to the biotechnology workforce annually



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Our State's Science Environment

◆ Limited Infrastructure

- To compete we must focus on our strategic advantages and areas where we can excel
- To compete we must collaborate to leverage our individual resources into a nationally competitive critical mass
 - Facilitated by a state-wide, broad-band communication network

◆ University Expertise in Managing a Science Enterprise

- Utilize graduate education to create new technology
- Utilize graduate education to develop the next generation biotechnology-trained workforce



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In Closing

- ◆ Thanks for an opportunity to highlight the UI's biotechnology program focus and challenges
- ◆ Complement BioIdaho for generating public and private sector interest in biotechnology
- ◆ Questions?



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